

HAT-0019

RECEIVED
CENTRAL FAX CENTER
JUL 19 2006

REMARKS

Claims 1, 10, and 15 have been amended, leaving Claims 1-19 for further consideration in the present amendment. Support for the amendment can be found in Figure 4 as well as in paragraph [0054].

It is believed that the amendments made herein may be properly entered at this time, *i.e.*, after final rejection, because the amendments do not require a new search or raise new issues and reduce issues for appeal. No new matter has been introduced by these amendments.

Reconsideration and allowance of the claims is respectfully requested in view of the following remarks.

Claim Rejections Under 35 U.S.C. §103(a)

A. Claims 1-13 and 15-19 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over U.S. Patent No. 5,092,970 to Kaczur et al. (hereinafter "Kaczur '970"). Applicant respectfully traverses this rejection.

Independent process Claims 1, 10, and 15 have in common the feature of feeding an aqueous alkali metal chloride solution to the anode compartment to generate an effluent and feeding the effluent and an alkali metal chlorite solution to the central compartment, wherein the chlorine dioxide is at a percent conversion greater than 75 percent based on an amount of the alkali metal chlorite.

Kaczur '970 fails to establish a *prima facie* case of obviousness because Kaczur '970 fails to teach or suggest all claim elements. Specifically, Kaczur '970 fails to teach or suggest a process comprising, *inter alia*, the feature of feeding an aqueous alkali metal chloride solution to the anode compartment to generate an effluent and feeding the anode effluent and an alkali metal chlorite solution to the central compartment. Rather, Kaczur '970 teaches and suggests adding salt additives to the central compartment. There is no disclosure or suggestion for feeding an aqueous alkali metal chloride solution to the anode compartment to generate an effluent and feeding the effluent and an alkali metal chlorite

HAT-0019

solution to the central compartment. Because of this, the Kaczur '970 process for chlorine dioxide is markedly different than that claimed by Applicant in terms of process steps and function.

As further evidence that the Kaczur '970 process is markedly different from Applicant's claimed process, the Examiner is directed to review the results provided in Table 1 of Kaczur '970. The percent conversion to chlorine dioxide provided by the disclosed process ranged from 22% to as high as 58%, which generally increased after storage. In each instance, the percent conversion to chlorine dioxide is well below Applicant's claimed process, wherein the chlorine dioxide has a percent conversion greater than 75 based on the amount of the alkali metal chlorite.

Still further, the Examiner comments and admits that "the Kaczur patent fails to disclose feeding of the acidic effluent from the anode compartment to the central compartment, rather it allows the acid ions to penetrate the central compartment from the anode compartment." It is exactly because of this that the processes are so markedly different. In Kaczur '970, the hydrogen ions presumably flow from the anode compartment to the cathode compartment. In contrast, Applicant's effluent contains hypochlorous acid and hydrogen chloride because of the electrolytic reaction with the alkali metal chloride that occurs in the anode as in Claims 1, 10 and chlorine gas as in Claim 15, which are then fed with the alkali metal chlorite solution into the central compartment. This is markedly different from what is taught by Kaczur 970 and is believed to be a causal factor for the differences in percent conversion between the two processes. As noted in Applicant's paragraph [0054], the *"use of sodium chloride advantageously increases the percent conversion beyond that expected for sodium chlorite to chlorine dioxide conversions alone."* Applicant has significantly improved the percent conversion of chlorine dioxide relative to Kaczur '970.

In view of the foregoing, the rejection applied to Claims 1, 10, and 15 is requested to be withdrawn. Given that Claims 2-9, 11-13 and 16-19 variably depend from one of these independent claims; they too are patentable for at least the same reasons.

HAT-0019

B. Claims 1-13 and 15-19 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over U.S. Patent No. 5,106,465 to Kaczur et al. (hereinafter "Kaczur '465"). Applicant respectfully traverses this rejection.

Kaczur '465 is a continuation-in-part of Kaczur '970 above. The process for generating the chlorine dioxide appears to be identical to Kaczur '970. The percent conversion of sodium chlorite to chlorine dioxide ranged from 22% to as high as 58%, which generally increased after storage. As such, Kaczur '465 fails to disclose or suggest an electrolytic process that provides a percent conversion of alkali metal chlorite to chlorine dioxide greater than 75%. For reasons previously discussed, feeding the sodium chloride solution into the anode compartment advantageously increases the percent conversion beyond that expected for sodium chlorite to chlorine dioxide conversions alone.

In view of the foregoing, the rejection is requested to be withdrawn.

C. Claims 14 stands rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Kaczur '465 above and further in view of U.S. Patent No. 5,609,742 to Sampson et al. (hereinafter "Sampson"). Applicant respectfully traverses this rejection.

Claim 14 depends from Claim 10 and includes the feature that the percent conversion to chlorine dioxide is greater than 75%. For reasons discussed above, Kaczur '465 fails to teach or suggest a process for generating chlorine dioxide that includes these features. Sampson fails to compensate for the deficiencies of Kaczur '465. Sampson discloses the oxidation of water within its anode compartment to generate hydrogen ions and oxygen. There is no disclosure of feeding an aqueous sodium chloride solution to the anode compartment to generate an effluent and feeding the effluent and an alkali metal chlorite solution to the central compartment. The cited references, individually or in combination, would fail to provide a percent conversion of alkali metal chlorite to chlorine dioxide that is greater than 75%, as is claimed by Applicant. Thus, the combination of references fails to establish a prima facie case of obviousness.


In view of the foregoing, the rejection of Claim 14 is requested to be withdrawn.

HAT-0019

It is believed that the foregoing amendments and remarks fully comply with the Office Action and that the claims herein should now be allowable to Applicant. Accordingly, reconsideration and allowance is requested.

If there are any additional charges with respect to this Amendment or otherwise, please charge them to Deposit Account No. 06-1130 maintained by Applicant's attorneys.

Respectfully submitted,
CANTOR COLBURN LLP

By: 
Peter R. Hagerty
Registration No. 42,618

Date: July 19, 2006
CANTOR COLBURN LLP
55 Griffin Road South
Bloomfield, CT 06002
Telephone No.(404) 607-9991
Facsimile No. (404) 607-9981
Customer No. 23413